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INFORMATION SYSTEMS SERVICE QUALITY: AN EXAMINATION OF USER EXPECTATIONS

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ABSTRACT

This paper reports the results of a field study which examined the expectations of users as they relate to the quality of service offered by the Information Systems (IS) function within organizations. The results show that users have consistently high expectations both within and across organizations. The paper presents a possible cause for this consistency along with ways that management can intervene in order to influence user expectations.

KEYWORDS

Information Systems, Service Quality, User Expectations

INTRODUCTION

Even to the casual observer, the Information Systems (IS) function has a considerable service component. Obvious examples of IS services include help desk support and hardware/software installations. Further examination, however, reveals other IS services that are less obvious. Examples include user training, project management, and applications development. Taking all these services into account, some researchers have argued that the true role of IS is that of a classical services marketer (Watson, Pitt, Cunningham, & Nel 1993). Following this line of reasoning, almost every task performed by the IS function can be classified as a service. As such, IS managers interested in improving the effectiveness of their organizations must, necessarily, be concerned with measuring the quality of service they offer.

While there may be little doubt about service quality's critical importance to IS, there is still some question as to what exactly should be measured and how the measurement can be used to improve an organization's level of quality. As it relates to the question of what should be measured, this paper accepts the convention that service quality can be derived by comparing measures of user expectations

and perceptions (Parasuraman, Zeithaml, & Berry 1985). This disconfirmation process has been operationalized in numerous instruments, the most common of which is the SERVQUAL questionnaire developed in marketing. As to the question of how the measurement can be used to improve service quality, most research appears to favor managerial interventions which attempt to manipulate user perceptions. For example, managers are encouraged to train their service employees to be polite and prompt so as to increase the user's perception of IS courtesy and responsiveness. While this emphasis on perceptions may seem obvious, it has in many ways stunted our understanding of user expectations. In doing so, we have neglected one of the two possible avenues for managerial intervention, that is, user expectations. The current paper, therefore, places its emphasis on expectations in order to address this overlooked aspect of service quality.

The paper begins by discussing the disconfirmation process at work in the formation of service quality assessment, paying particular attention to the sources of user expectations. In order to better understand these expectations, the paper then presents the research questions. Having established the motivations for study, the paper next reports the results of a field study in which expectations are compared across user groups. Finally, the paper discusses how these results should be interpreted and used by IS managers.

SERVICE QUALITY AND EXPECTATIONS

In order to understand service quality it is first important to define the term. Service quality has been widely researched in multiple disciplines. As such, a number of definitions exist to describe the phenomenon. Although these definitions differ somewhat, the majority share some key concepts which have become standard in the academic conceptualization of service quality. Mangold and Babakus (1991) provide one of the most complete definitions. Specifically, they define service quality as “the outcome of a process in which consumers' expectations for the service are compared with their perceptions of the service actually delivered” (p. 60).

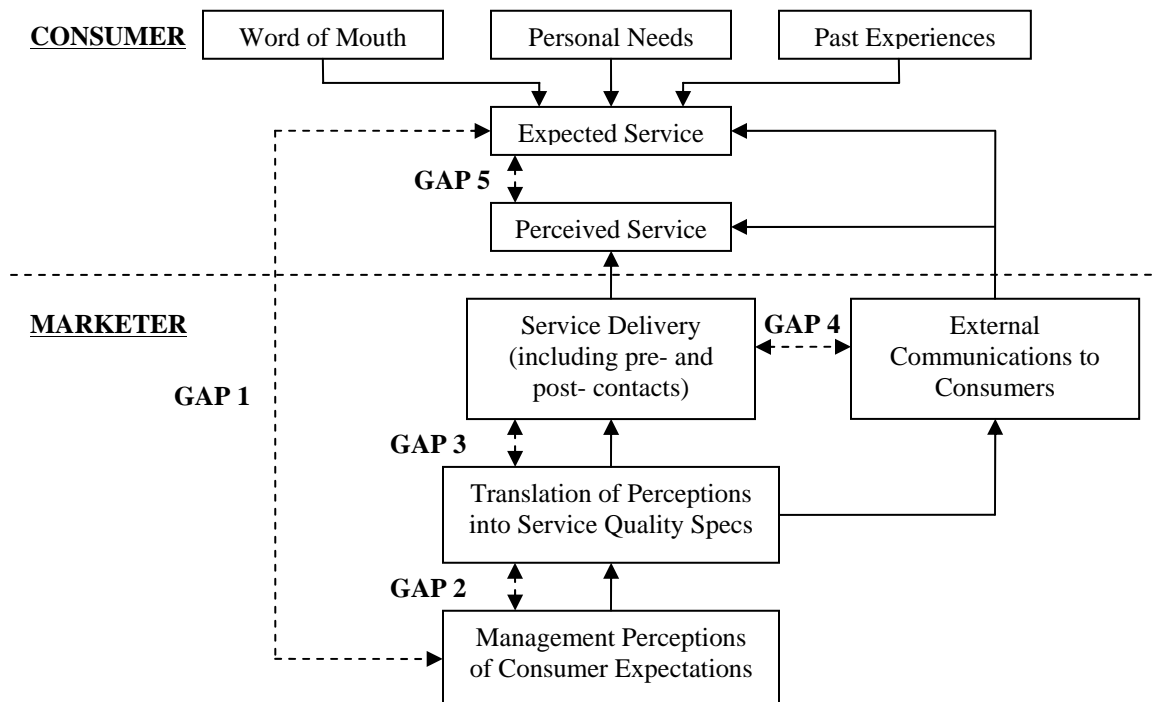


Figure 1. Service Quality Model (Parasuraman et al. 1985)

As is apparent in this definition, the assessment of service quality relies on a disconfirmation process. Specifically, it is the disconfirmation resulting from the comparison of a consumer's expectations of service with their perceptions of service received. This view of service quality was first proposed by Parasuraman, Zeithaml, and Berry (1985) in their model of marketer-consumer interaction (see Figure 1). In this model, a gap was identified between the consumer's expectations and perceptions of the marketer's service. Parasuraman, Zeithaml, and Berry (1985) defined this gap (Gap 5 in Figure 1) as perceived service quality. When the perceptions exceed the expectations, the consumer perceives service quality as positive. When the expectations exceed the perceptions, the consumer perceives service quality as negative.

The process used to explain service quality's formation relies heavily on disconfirmation theories developed by Churchill and Surprenant (1982). These theories were originally used to explain the formation of user satisfaction. The process begins with the expectations. As in user satisfaction research, service quality expectations refer to predictions. In effect, the expectations are what the service provider *will* offer instead of what it *should* offer. According to Kettinger and Lee (1994), consumers form expectations about a service prior to its delivery. These expectations are based on such factors as personal needs, word-of-mouth, and past experiences. Consumption of the service reveals a perceived level of quality. The consumer then either confirms or disconfirms the original expectation based on this perceived quality.

In order to operationalize the disconfirmation process described in their model, Parasuraman, Zeithaml, and Berry (1988) developed the SERVQUAL instrument. Specifically, SERVQUAL measures the disconfirmation across five dimensions:

Tangibles:	Physical facilities, equipment, and appearance of personnel
Reliability:	Ability to perform the promised service dependably and accurately
Responsiveness:	Willingness to help customers and provide prompt service
Assurance:	Knowledge and courtesy of employees and their ability to inspire trust and confidence
Empathy:	Caring, individualized attention the firm provides its customers

SERVQUAL is administered as two questionnaires (one to capture expectations and one to capture perceptions). The questionnaire items use a seven point Likert-type scale anchored with "strongly disagree" and "strongly agree." The responses on the expectation questionnaire are then subtracted from the corresponding responses on the perception questionnaire. The resulting difference score represents the perceived level of service quality.

While instruments like SERVQUAL have become popular ways for researchers and practitioners to measure service quality, little work has gone into understanding the factors behind the disconfirmation calculation. In particular, user expectations have largely been ignored. There appears to be a generally held belief that users simply expect too much and that their perceptions of the service will never meet these unrealistic expectations. However, given that the sources of expectations are highly variable, there is no reason to believe that expectations are too high or that users even agree about what their expectations are. In theory, different users, or user groups, could have very different expectations based on their experiences, personal needs, etc. As such, two questions become relevant: 1) Are user expectations consistent? and 2) Are user expectations too high? In order to shed some light on these questions, the following sections describe a field study which examines what users expect and if those expectations are consistent?

METHOD

Sample and Data Collection

To answer the research questions posed in the previous section it was decided to collect user expectations about the IS function. Several organizations were contacted to solicit their participation in the study. Three organizations, representing both the public and private sectors, agreed to participate. Specifically, the organizations are involved in retail, education, and state government. This diversity in organization type substantially increases the generalizability of the study findings.

A set of packets was sent to the IS representative for each of the participating organizations. Each packet contained a cover letter, a return envelope, and a questionnaire with the SERVQUAL instrument. The questionnaire also contained a small section to collect demographic data. The cover letter and questionnaire specifically stated that respondent anonymity was assured. The packets were distributed by each organization's IS representative to its respective users. Of the 942 packets that were distributed, 272 responses were received (28.9% response rate). Of these, 37 responses were unusable due to excessive missing data, leaving a final sample of 235 (24.9% response rate). The demographic breakdown of respondents is given in Table 1.

	n	Age					
		< 20	20-29	30-39	40-49	50-59	60 >
Organization 1	87	2.3%	50.6%	12.6%	14.9%	17.2%	2.3%
Organization 2	105		7.6%	21.9%	36.2%	26.7%	7.6%
Organization 3	28			17.9%	42.9%	28.6%	10.7%
Total	220	0.9%	23.6%	17.7%	28.6%	23.2%	5.9%

	n	Gender	
		Male	Female
Organization 1	88	37.5%	62.5%
Organization 2	113	39.8%	60.2%
Organization 3	31	45.2%	54.8%
Total	232	39.7%	60.3%

Table 1. Sample Demographics

Results

Once the data had been collected, the responses on the expectation questionnaire were aggregated by the five SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy). These dimension scores were then averaged by organization. The mean and standard deviation for each dimension, by organization, is given in Table 2.

Dimension	Organization 1		Organization 2		Organization 3		p-value
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Tangibles	5.511	0.842	5.441	0.861	5.304	0.702	0.487
Reliability	6.454	0.759	6.501	0.708	6.536	0.644	0.831

Responsiveness	6.242	0.773	6.317	0.768	6.202	0.877	0.682
Assurance	6.407	0.692	6.420	0.771	6.484	0.649	0.878
Empathy	6.101	0.830	6.292	0.736	6.187	0.837	0.227

Table 2. Comparison of Means

It should be noted that all dimensional means were relatively high. Given a seven point scale, no mean fell below 5.300. This indicates that, on average, the respondents at least somewhat agreed with the expectation that the IS function would provide excellent service quality. It should also be noted that all dimensional standard deviations were relatively small (i.e., less than one point on the scale). This indicates that there was little variance in the dimensional scores.

Following the aggregation, the means were then compared to see if there were any statistically significant differences among the organizations. The comparison of means was conducted using a one-way ANOVA. The resulting p-values (also in Table 2) indicate that the dimensional means do not differ significantly among the three organizations.

DISCUSSION

Based on the results presented in Table 2 it is clear that user expectations of the IS function are largely consistent both within and among organizations. The within group consistency is supported by the fact that the standard deviations were low. This indicates that there is very little spread in the data about the mean. The consistency of expectations among organizations is supported by the results of the ANOVA which indicated no significant differences in the dimensional means. Taking these results into account, it appears that users, regardless of organization, have similar expectations about the quality of service provided by the IS function.

This result is somewhat surprising. Considering that expectations are formed by past experiences, word-of-mouth, and personal needs (Kettinger & Lee 1994), a higher degree of variability would be expected. Instead, there appears to be a great deal of agreement about what should be expected in terms of IS service. Given that the scores were also consistent across organizations, the source of the consistency cannot be the organizations themselves. Something beyond the organizations has shaped the users' expectations to make them similar. One possible way to explain this similarity would be the influence of the media. Advertisements for IS consulting firms (e.g., IBM and EDS) and user support organizations (e.g., Geek Squad) have undoubtedly affected the way users view the IS function. Whatever the source of the similarity, IS managers should be aware that their users are all looking for the same level of service.

The results in Table 2 also address, at least partially, the question of whether users expect too much. With all means above 5.300, it is clear that users tend to the high end of the scale ("somewhat agree," "agree," and "strongly agree"). In fact, excluding the Tangibles dimension¹, all other dimensional means were above 6.100. The skewing of the scores is made even more apparent when the small standard deviations are considered. All in all, users appear to expect a very high level of service quality.

That said, is the expected level too high? The answer to this question is obviously subjective. IS managers can believe what they will about the value of their users' expectations. The simple fact is that those expectations will, in large part, determine the assessment of their organization's service quality. To say this more eloquently (Hernon & Altman, 1996): "Quality is in the eyes of the beholder, and although

¹ The lesser score for Tangibles is in-line with previous research which found that the Tangible dimension is often not significant in the assessment of IS service quality.

it sounds like a cliché, it is literally true. If customers say there is service quality then there is. If they do not, then there is not. It does not matter what an organization believes about its level of service” (pp. 5–6).

Given that user expectations are high and that they appear to come from outside the organization, what, if anything, can an IS manager do? The simple answer is that IS managers must become involved in educating their users in order to better inform their expectations. As an example, straightforward service level agreements can be used to let users know what services IS is prepared to deliver. Other examples include greater openness with the user community about resource availability and IS demand cycles. While these educational methods may have a limited effect, they are certainly better than the alternative of doing nothing.

CONCLUSION

The significance of the service component within the IS function is hard to ignore. IS managers must be aware of their current level of quality while constantly pushing their organizations to get better, faster, and so forth. To date, most managerial interventions have centered on modifying user perceptions of the services they receive. While this method can be effective, it is also important for managers to pay attention to the expectations of their users. This paper has shown that those expectations are both consistent and relatively high. IS managers would be well served if they gave as much time to shaping expectations as they give to shaping perceptions.

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